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ABSTRACT

This study investigated the impact of a sequence of social relationship activities on regard for classmates and teammates in middle school (grade 7) mathematics classes using cooperative learning. The sample consisted of 184 students (55% Hispanic American, 27% White, 14% Black, and 3% Asian American) in a city in Los Angeles County (California). Two teachers each taught three classes; each teacher taught two experimental treatment (cooperative learning) classes and one conventional (comparison) class. Activities were sequenced and related to the following stages of group development: (1) class-building; (2) preparation for group work/team-building; (3) communication; and (4) cooperation and helping behaviors. Students in experimental groups also received instruction in effective explaining and problem solving. Overall, the sequence of interventions was effective in increasing students' regard for one another. Class-building increased students' regard for classmates, and team-building and activities to prepare for group work were effective in increasing students' regard for teammates and cross-ethnic and cross-gender regard. The differences between classes demonstrate how cooperative learning can differ in practice even when teachers have the same instructions and students have the same activities. Statistical data are presented in 12 tables. A 33-item list of references is included. (SLD)

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Intergroup Relations in Cooperative Learning Groups

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This study investigated the impact of a sequence of social relationship activities on regard for classmates and teammates in secondary (seventh grade, middle school) mathematics classes using cooperative learning. The activities were sequenced and related to stages of group development - classbuilding, preparation for group work/teambuilding, communication, cooperation and helping behaviors (Webb, 1985) and instruction and practice in effective explaining. Special attention was paid to attitudes toward different ethnic groups and females and males.

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Theoretical Framework

Watson's (1947) contact theory specifies conditions under which positive interpersonal relationships among individuals of different races will develop. These are: positive interdependence; equal status; social norms favoring equalitarian cross-ethnic contact; attributes of group members that contradict prevailing stereotypes; and contact that promotes interaction on a personal as well as a task level. In 1952, the Social Science Statement (Minnesota Law Review, 1953), an appendix to appellants' briefs filed in the Supreme Court's school desegregation cases, reviewed the social science evidence the available to anticipate the effects of desegregation on black students. They claimed that improved race relations "depends on the circumstances under which members of previously segregated groups first come in contact with others in unsegregated situations...available evidence...indicates...the importance of such factors as: the absence of competition of a limited number of facilities or benefits; the possibility of contacts which permit individuals to learn about one another as individuals; and the possibility of equivalence of positions and functions among all of the participants" (pp. 437-438). Allport (1954), one of the signers of the Social Science Statement, stated three basic conditions for desegregation: 1) unmediated interethnic contact; 2) occurring under conditions of equal status between members of the various groups participating in a given setting; 3) where the setting officially sanctions interethnic cooperation.

Cooperative learning is an instructional methodology that provides a context in which these conditions can be met. Indeed, Slavin's (1990) examination of experimental evidence from studies of cooperative learning

has generally supported the conclusions of the Social Science Statement and of Allport (1954). He found that in experiments of four weeks' duration or more that were conducted in elementary or secondary classrooms and used appropriate research methods and analyses to rule out obvious bias, that with only a few exceptions, this research demonstrated that when the conditions outlined by Allport are met in the classroom, students are more likely to have friends outside their own ethnic groups than they would in traditional classrooms.

Johnson and Johnson (1989) reviewed fifty-three studies and found that cooperative experiences promoted significantly better relationships between white and minority individuals that did competition.

Social scientists have been conducting research and developing theories about small groups for over twenty-five years (Bennis and Shepard, 1956; Hare, 1973; Schmuck and Schmuck, 1974, 1983; Schutz, 1958; Tuckman, 1965). Included in this research are theories about stages of development in groups. Drawing on this work, Schmuck and Schmuck (1983), Sharan and Sharan (1976), and Gibbs (1987) applied the theoretical framework of stages of group development to classroom group work.

Schmuck and Schmuck (1983) outline four stages of group development: Stage 1: Action Ideas for Facilitating Psychological Membership (inclusion and membership); Stage 2: Action Ideas for Establishing Shared Influence (the right to talk as well as the right to be heard); Stage 3: Action Ideas for Pursuing Academic Goals (focus upon the pursuit of academic goals as well as the student's personal growth); Stage 4: Ideas for Self-Renewal.

Sharan and Sharan (1976) outline three stages: Stage 1: Developing a sense of belonging and defining goals; Stage 2: Planning procedures and increasing involvement; Stage 3: Realizing objectives.

Gibbs (1987) outlines three stages: Stage 1, Inclusion: "building community", taking individuals and making everyone feel part of the group building acceptance and trust. Stage 2, Influence: activities to encourage students to assert personal beliefs, to problem solve, make decisions. Stage 3, affection: influence issues have been resolved and the groups have begun to realize their potential as working teams. They express caring and positive regard openly, towards one another and the teacher.

To guide teachers in improving classroom climate such that it is conducive to group work and to teach students the skills required for successful group work numerous activities and exercises have been developed. Schmuck and Schmuck (1983) provide "action ideas" (exercises) for developing a classroom group. They focus on fundamental properties of the developing classroom group: expectations, leadership, attraction-cohesiveness, norms, communication, and conflict. Putting their theory into practice, two publications were developed through a federally funded Title IV-C grant: Project C.L.A.S.S. (Hoagland, Eyler, and Vacha, 1981) which includes numerous strategies for K-3 classes focusing on friendship, cooperation, and communication; and Improving Classroom Social Climate Vacha, McDonald, Coburn, Black, 1979) which also includes numerous strategies for 4-6 classes that focus on the variables noted above by Schmuck and Schmuck.

Sharan and Sharan (1976), draw on activities and exercises developed by Baker, Smith, Walters, and Wetzel (1971) and outline lessons to enable

students to study effectively in groups. Gibbs' (1987) book, Tribes, is essentially a collection of activities and exercises designed to promote inclusion and influence.

As cooperative learning evolved and developed as an instructional methodology, theories of stages of group development and of using activities and exercises to teach groupwork skills were included.

Aronson (1978) suggests teambuilding exercises before the curriculum material is tackled since at the beginning of the year students have had little preparation learning how to work together cooperatively on a difficult academic task. Therefore, he suggests a short period each day for several weeks of teambuilding, conscious development of helping and listening skills, and that students evaluate (in writing) their group process.

Interpersonal and small-group skills are included in one of the Johnsons' (1984) four elements of cooperative learning. Johnson, Johnson and Holubec (1988) make four assumptions about teaching cooperative skills: 1) a cooperative context must be established prior to teaching interpersonal and small-group skills; 2) cooperative skills have to be directly taught; 3) the teacher structures cooperation and defines the skills required to collaborate, but it is the group members who largely determine whether the skills are learned and internalized; and 4) the earlier students are taught cooperative skills, the better.

The Child Development Project explicitly focuses on social values and social skills in all phases of cooperative activities. Solomon (1990), notes that children (who spend much time in cooperative group activities) may learn general social values such as cooperation, collaboration, fairness, mutual assistance, responsibility to the group, and democratic decision-

making but that this doesn't happen automatically. Findings from their study suggest carefully setting up and adequately monitoring groups to prevent the development of autocratic domains. They found that when values are named and discussed children are provided with organizing concepts which apply across situations; and that this should help them to behave consistently when in various interpersonal settings, not just in groups and not just in the classrooms.

Graves and Graves' (1985) program for implementing cooperative learning involves a series of steps that foster growth in cooperative skills - laying the groundwork, team building, simple teamwork, coordinated teamwork, group research and investigation, and group creativity. They begin preparation for group work with nonacademic games, activities and events that integrate diverse individuals and promote identification with the total class. At each stage, activities are used to learn and practice social skills in addition to cognitive skills.

Cohen (1986) states that the first step in introducing group work to a classroom is to prepare students for cooperative work situations since they will be working together without direct supervision. She notes that it is a great mistake to assume that children (or adults) know how to work with each other in a constructive collegial fashion. Cohen advises using Bandura's (1969) principles of social learning - 1) label and discuss new behaviors; 2) learn to recognize when new behaviors occur; 3) use labels and discuss behavior in an objective way; 4) practice new behaviors; 5) reinforce new behaviors when they occur - to directly teach cooperative behaviors such as helping behaviors, listening, and equal participation through exercises and games. Additionally, Cohen feels the teacher must

assist the class in reflecting on important features of cooperation and should discuss why it is important to learn groupwork skills.

As noted above, beginning with social scientists' research in small groups, paying attention to small group development and teaching students the skills necessary to work in groups has become an integral part of most cooperative learning methods. However, as cooperative learning has become an increasingly prevalent and popular instructional methodology, conflicts have developed between what we know about the conditions under which small groups are effective and the pressures on teachers regarding content coverage. Working in groups is a powerful instructional methodology for helping students better understand the curriculum. Yet introducing students to small group work takes time. There are the stages all groups go through - the students need to get to know one another, there are social skills to be learned, practiced and discussed. Given the press for coverage, teachers are often reluctant to take time away from "covering the material". In response, some have suggested streamlining the process, leaving out preparation for group work in order to get students in their groups and right into the "academics" as soon as possible.

Kagan (1990) notes that he has gone through four stages of thinking on social skills in cooperative learning groups and now advocates differentiated models for teaching social skills - a "formal approach" of social skill acquisition (focusing on a social skill for each lesson) for the very youngest (K-2) students; for older students he suggests "a skill of the week".

This study also addreses several of these issues. What tradeoffs are involved when students experience different degrees of preparation for

group work? In this study, after the second phase, students in both conditions were working in cooperative learning groups. But there was a difference in their preparation for group work. Those in the treatment condition who had experienced preparation for group work/teambuilding during Phase 2 continuted to experience additional activities and exercises to enable them to learn more effectively by teaching them additional communication and cooperation skills, helping skills, and, in Phase 4, instruction and practice in effective explaning. At the beginning of Phase 3, those in the control condition received preparation for group work/ teambuilding and during Phase 4 they participated in additional teambuilding activities. Overall, preparation for group work was not as intensive for the control group as it was for the treatment group.

Students were prepared for group work in stages in this study - first participating in classbuilding activities to get to know classmates and to feel comfortable in the class. Once comfortable in the class, students were assigned to teams, after which preparation for group work began. Students participated in teambuilding activities to feel comfortable with teammates; they participated in exercises and activities to learn communication and cooperation skills. Finally, students in the treatment group participated in exercises and activities to learn helping skills and effective explaining. This study examines the effect of this sequence of preparation for group work on students regard for classmates and teammates, for classmates and teammates and on cross-ethnic and cross-gender regard.

While cooperative learning has been shown to improve cross-ethnic relations, unanswered questions remain about whether the improvement concerns majority groups or minority groups (Slavin, 1983) and males and

females. Studies on cross-ethnic relations focus on schools in which minority students (Hispanic or black) are truly in the minority, being outnumbered by white students. Little is known about the dynamics in schools where "minority" students outnumber white students. In this study, white students were substantially outnumbered by Hispanics.

Finally, most cooperative learning studies that have examined liking of classmates have used highly structured cooperative learning methods in elementary school classrooms (Slavin, 1983). Few studies have used less structured methods in secondary classrooms (eg. Cooper, Johnson, Johnson, and Wilderson, 1980), and the findings are not consistent. Because possibilities for student interaction are very different in elementary and secondary classrooms, the findings from elementary classrooms may not generalize to secondary classrooms. In this study cooperative learning was not highly structured and took place in a middle school (secondary) classroom.

This study, then, investigated the effect of preparation for group work on student regard for classmates and teammates in cooperative groups, the use of cooperative learning in a multi-ethnic setting where the "majority" is in the minority, and of loosely structured cooperative learning methods in a secondary school classroom on cross-ethnic and cross-gender regard for classmates and teammates. In addition, it begins to address the issue of whether or not students need a more or less intensive preparation for learning in small groups.

Design of the Study

Overview. The first half of the project began at the beginning of the second semester of the 1988-1989 school year. With one or two exceptions

students participating in the project had been in the same math class with the same teacher since September. Prior to this project students had no experience learning in small, heterogeneous, cooperative learning groups - they sat in rows, worked alone, and had spent no class time getting to know one another.

The study was conducted in four phases. Phase 1 lasted about a week. Beginning with Phase 2, each phase lasted for about three weeks, with about three weeks between phases. Prior to Phases 1, 3 and 4 there were several days of teacher training in instruction and practice in cooperative learning that included activities for classbuilding, preparation for group work/ teambuilding, communication, cooperation and helping skills and instruction and practice in effective explaining as well as problem-solving instruction. (A complete listing of the activities and exercised used in this project can be found in Farivar and Webb, 1991).

	Treatment Classes	Control Classes
Phase 1	Classbuilding	Classbuilding
Phase 2	Basic Cooperative Learning + Preparation for Group Work Teambuilding	Traditional Instruction
Phase 3	Cooperative Learning + Communication and Cooperation Skills Helping Skills (general, mathematical)	Basic Cooperative Learning + Preparation for Group Work Teambuilding
Phase 4	Cooperative Learning + Communication and	Basic Cooperative Learning + Additional Teambuilding

Cooperation Skills
Helping Skills (general,
mathematical)

+

Instruction, Practice
in Effective Explaining

In every phase, all classes used the same mathematical curriculum, classwork, homework, quizzes, and tests, and followed the same schedule. Much of the material came from a current general mathematics textbook for Grade 7. To supplement textbook exercises and problems, some lessons were designed around realistic contexts (e.g., designing restaurant menus and ordering and paying for meals, including tip and tax). The difference between experimental and comparison classes lay in whether students worked in cooperative groups and the classbuilding, preparation for group work/teambuilding, communication, cooperation and helping skills and instruction and practice in effective explaining activities they carried out to prepare them for working with others.

Phase 1.

During Phase 1 all classes participated in classbuilding activities designed to build inclusion (Schmuck and Schmuck, 1983, Aronson, 1978; Gibbs, 1987; Graves and Graves, 1985), to familiarize students with each other and to help students be more comfortable in the classroom. As noted above, the students had no experience working in small groups. Few students knew one another although they had been in the same class for a semester. Those who did know each other tended to know and be friends with students from the same racial group. Since students would be assigned to heterogeneous groups and expected to work and learn together, we began with activities that would enable the students to get to know one another -

to learn classmates names and become accustomed to interacting with a variety of classmates.

Phase 2. (operations with decimals)

This phase compared basic cooperative learning (whole-class introduction by the teacher combined with cooperative small-group seatwork on problems) with traditional instruction (combination of whole-class instruction and individual seatwork).

Experimental: Students in the cooperative learning condition discussed norms for small group work (being an attentive listener, no "put downs", using moderate voice levels). They learned and practiced basic helping behaviors and group task and maintenance skills (checking for other students' understanding, sharing ideas and information, encouraging others, and checking for agreement) (Dishon and O'Leary, 1984). They created their own group names and group signs and assumed specific roles (Johnson and Johnson, 1991) for management purposes (e.g., the "engineer" was responsible for placing the group's papers in their folder at the end of the class period); no roles were used when working on problems. Throughout the mathematics unit (operations with decimals), after a daily introduction by the teacher on the mathematics material, students worked in small groups on the class problems.

A partial group reward structure was used to encourage students to help each other learn the material. Although all students in a group turned in their classwork, each student in a group had a randomly assigned number (1,2,3 or 4), and at the end of the lesson the teacher would spin a spinner and the number chosen would be the paper that the teacher would correct. All students in the group received that grade for classwork. Homework

followed the same format. All students turned in their homework but points earned was based on the randomly chosen number. The group mean on the posttest contributed a portion to teach student's grade on the test. Quizzes and other student work were graded individually. (Because the posttest and classwork constituted only a small portion of a student's grade in the class, however, the partial group reward structure was not very salient to students. Informal observations and conversations with students showed that most students paid little attention to the group reward aspect and some were even unaware of it.)

Comparison: Students in the comparison condition had the same teacher introduction to the day's assignment, but worked the problems individually. In most cases, the teacher discouraged students from interacting with each other and required students to ask her for help instead of asking other students. Students were graded individually on all aspects of their work.

Phase 3. (fractions)

Experimental: The experimental classes received instruction and practice in effective communication and specific helping behaviors prior to beginning the unit. Classes first participated in activities designed to promote group problem solving not related to academic content. They participated in activities designed to promote listening and to encourage helping others. They also practiced activities designed to show them the benefits of two-way communication versus one-way communication and of listening to others, and which gave them practice in communicating with others, both verbally and nonverbally (e.g., instruction to assemble a puzzle without looking at the person and without his or her input vs. doing the same

task in a natural helping way with two-way communication). Next, the teacher discussed appropriate helping behaviors (e.g., asking for help when you don't understand or think you got the wrong answer, helping someone else if they seem confused, explaining how to solve the problem instead of just saying or giving the answer, not doing the work for another student but giving him or her a chance to do it) (Webb,1985) and reference charts displayed in the classroom ("When you give help..." and "When you don't get it...") (Farivar and Webb, 1991) that summarized important points about giving and getting help. This instructional treatment was designed to help students already working in cooperative groups to communicate more effectively with each other. As before, after a daily introduction by the teacher on the mathematical material, students worked in small groups on the class problems.

Comparison: Comparison classes worked in cooperative groups and participated in the same activities as the experimental classes had during Phase 2.

Phase 4 was a continuation of the comparison of instructional treatments carried out in Phase 3.

Experimental: At the beginning of the unit (percent), students in the experimental classes participated in activities designed to increase their ability to explain to a classmate how to solve particular mathematics problems. They performed and discussed skits (adapted from Swing and Peterson, 1985) that exemplified effective and ineffective explanations of how to solve mathematical problems.

Comparison: Classes in the comparison condition continued the same basic cooperative learning treatment during Phase 4 as they had during

Phase 3. They did not receive instruction or practice in helping behaviors or explaining how to solve problems.

Data Source

The sample consisted of students enrolled in six general 7th-grade mathematics classes (n=184, 55% Hispanic, 14% Black, 27% White, 3% Asian-American) in a city in Los Angeles County. The Hispanic students' English language proficiency varied widely. Some Hispanic students spoke no Spanish; about half were not fully English proficient and frequently spoke Spanish informally and when working on mathematics problems in the small groups. The school is one of two middle schools in the city.

Two teachers each taught three classes. Each teacher was assigned two experimental treatment and one comparison treatment.

The Classroom Social Relationships Questionnaire was administered to all students three times: prior to Phase 1, at the end of Phase 1; and at the end of Phase 4. The questionnaire consists of a listing of all students in each class. Students were asked to mark one of four possible responses for each classmate: "good friend" (the person is a good friend of yours), "OK to be around" (the person is OK to be around), "don't know the person" (you don't know the person), and "pass" (if none of the other three categories fit your relationship with the person).

Procedures

Students were assigned to groups heterogeneously to reflect the mixture of ethnic background, gender and ability in the classroom (Slavin, 1986). Students remained in their assigned groups for the duration of the project. Activities and exercises to teach the different group skills were taught at the beginning of each phase. Other activities, such as reviewing

class norms and social skills was to occur after instruction and prior to beginning group work. In practice, it took place more frequently at the beginning of each phase, particularly in Teacher B's class, and tapered off to about twice a week near the end of each phase. The final five minutes of the class period was supposed to be devoted to a whole-class review of the group's use of group work skills. In reality, this took place about twice a week.

Students also completed mathematical pre and post tests during phases 2, 3, and 4 to determine the impact of the instructional treatments on students mathematical problem solving skills (see Webb, Qi, Yan, Bushey, Farivar, 1990). The relationship between achievement level and regard for classmates and teammates is not included in this paper but will be the subject of future analysis.

Analytic Procedures

Differences over time in student's mean ratings of regard for classmates and teammates were tested using repeated measures analyses of variance. Differences between conditions at each time point were tested using analysis of covariance with the questionnaire ratings at the beginning of the study as the covariate. Because of the constellation of missing values, split plot analysis of variance produced a substantially reduced sample and is not used here.

Results

Treatment vs. Control

Regard for Classmates: Comparison of condition, treatment vs. control, showed significant difference in increased regard for classmates between Times 1 and 3 for both teachers (see Table 1). However, the control

condition was higher (2.92) than the treatment condition (2.83) in Teacher A's classes. Findings for Teacher B were the reverse - the treatment condition mean (2.77) was higher than the control mean (2.14). Teacher B's treatment condition (2.79) was also higher than that of the control (2.06) condition between Times 2 and 3.

Regard for Teammates: Comparison of treatment vs. control conditions was significant only for Teacher B from Time 1 to Time 2 - treatment (3.25), control (2.58), (see Table 2).

Changes Over Time

Regard for Classmates: Teacher A's students in both conditions significantly increased their regard for classmates over time (see Table 3). Students in Teacher B's control class significantly decreased in their regard for classmates over time. Their regard for classmates from Time 1 (2.37) to Time 2 (2.58) increased, but then it decreased from Time 2 (2.58) to Time 3 (2.13). The pattern for Teacher B's treatment group was similiar but not significant (see Table 3).

Regard for Teammates: In all classes, the change over time in positive regard for teammates was significant (see Table 4). This is an especially strong result given the fact that the students had been in class together for five months prior to the beginning of the study. In Teacher B's classes the largest changes occurred during between Time 1 (2.78) and Time 2 (3.23) in the treatment condition when students first experienced class and teambuilding activities. In the control condition the largest differences were between Time 2 (2.62) and Time 3 (3.03) when the students began work in cooperative groups and participated in teambuilding activities (see Table 4).

Cross- Ethnic Change Over Time

Regard for Hispanic Classmates: Change over time in increased regard for Hispanic classmates was significant in all groups with the exception of Teacher B's treatment group (see Table 5).

Regard for White Classmates: Change over time in regard for white classmates was significant in the control condition for both teachers (see Table 6). However, in Teacher A's control class, regard for white classmates increased; in Teacher B's control class regard for white classmates increased from Time 1 to Time 2 and then decreased from Time 2 to Time 3.

Regard for Hispanic Teammates: Change over time in regard for Hispanic teammates was significant in the control class for both teachers and also in the treatment class for Teacher B (see Table 7). For both teachers, the largest changes over time occurred in the treatment condition during the first part of the study when students first experienced class and teambuilding activities. In the control condition the largest changes over time occurred during the second part of the study when students began work in cooperative groups and participated in teambuilding activities (see Table 7).

Regard for White Teammates: Significant change over time in positive regard for white teammates occurred in both conditions for Teacher A. In Teacher B's classes there a decrease in regard for white students; the decrease in regard was significant in the treatment condition (see Table 8).

Cross-Gender Change Over Time

Regard for Female Classmates: Both control classes significantly increased their regard for female classmates (see Table 9).

Regard for Male Classmates: Significant change over time in positive regard for male classmates occurred in both conditions for Teacher A and in the treatment condition for Teacher B (see Table 10).

Regard for Female Teammates: Both conditions for both teachers showed significant change over time in postive regard for female teammates (see Table 11).

Regard for Male Teammates: Significant change over time in positive regard for male teammates occurred in both conditions for Teacher B. In Teacher A's classes there was a significant increase in regard in the control condition (see Table 12).

Discussion

Overall, the sequence of interventions used in this project were successful in increasing students' regard for one another. Classbuilding activities conducted at the beginning of the study were effective in increasing students regard for classmates. Teambuilding and activities and exercises to prepare students for group work were effective in increasing regard for teammates, and for increasing cross-ethnic and cross-gender regard.

The use of cooperative learning as an instructional methodology is widespread nationally at all levels of schooling. The use of the term "cooperative learning" is, however, a loose description used to describe a very wide range of instructional practices. This study clearly shows what it "looks like" in practice can vary greatly even when two teachers have been given the same instructions and their students participate in the same activities and exercises. And it shows what happens in the groups is dependent on what is and is not done to prepare students for group work.

Instructional context as related to teacher style emerged as an important factor throughout this study. Interesting differences in patterns of findings occurred that may be accounted for by the differences in teacher style. Findings for Teacher B were more consistent with and predictable given the design of the study than were the findings for Teacher A. Why? Compared with Teacher A, Teacher B was very structured and exercised tight control over all classroom activities. She was also much more precise in following the project's plans. Both teachers in the project were trained as elementary school teachers but the similarity between the two ends there.

Teacher A was very comfortable with the students, the atmosphere in the classroom was amicable and friendly. She bantered with the students about sports and school activities as they were settling down to work. Students in the class seemed comfortable with each other.

During training sessions prior to each phase of the study all social relationship activities and exercises were modeled, discussed and explained. Teacher A participated in discussion regarding the project but did not ask a lot of questions; she was more interested in "off-task" talk about sports and cooking.

Plans for the social relationship lessons were given to both teachers. Both teachers were aware that they were to follow the plans on the same days and in the same sequence. However, once Teacher A was in the classroom she did not always adhere to was planned and agreed to.

Teacher B's class was consistently more structured than Teacher A's. She was very thorough in everything she did. She was not uncomfortable with the students but certainly not as comfortable as Teacher A. There was

little student interaction in the class. Teacher B had difficulty with one or two particular students and sometimes sent them to the office. During the training sessions prior to each phase, Teacher B asked a lot of questions and took copious notes. She followed the plans precisely and did everything she was asked to do as a part of the project.

These differences in classroom context may help explain the difference in increased regard for classmates. Teacher A's classes were much more conducive to student interaction prior to the study than were Teacher B's. Informal classbuilding took place in Teacher A's classes throughout the school year. Formalizing classbuilding through activities during Phase 1 may have been more of an enhancement of what was already taking place than being something entirely new.

In Teacher B's classes, however, prior to the project beginning, no informal or formal attention had been paid to getting to know one another as a class.

Time spent in secondary classrooms is both limited and intense. It is for only one period a day and during that time it is focused on one curricular area. Students don't necessarily see classmates at other times during the day as happens in elementary classrooms. When students work in cooperative learning groups it is within these small groups that the change in regard should be most apparent. And this is the case. In this study, in both conditions, regard for teammates increased across all groups at each time point with the exception of Teacher B's treatment condition - it remained flat between Time 2 and 3 (3.23 to 3.23). Here again difference in classroom context is important. The additional intervention of preparation for group work and teambuilding between Time 2 and 3 increased regard for

teammates in Teacher A's treatment condition (from 3.01 to 3.15) but not for Teacher B's treatment condition. Why different findings for each teacher? All things being equal, one would expect similar findings. But, of course, as we have seen, all things were not equal. It may be that participation in more intensive preparation for group work activities continued to effect regard for teammates in Teacher A's treatment class because the classroom environment had been predisposed to it from the beginning. Or it may be a ceiling effect - since students in Teacher B's treatment condition had the highest regard for teammates at Time 1, they had less far to go in increased regard for teammates.

Seating arrangements also may have made a contributed to different findings for the two teachers. At the outset of the study, Teacher A changed the seating from students sitting in rows to making groups of four chair/desks facing one another and kept them this way for all her classes every day. Every day Teacher B, however, moved the chair/desks back and forth from rows for the control and her other classes into group seating arrangements for the treatment classes through Phase 2. Thus, students in both Teacher A's classes had face to face interaction earlier than than did students in Teacher B's classes even though students in the control condition were not yet working cooperatively.

The study also found a significant increase in cross-ethnic regard. Even though they had been in the same class together for a whole semester, this was probably one of the very first times these students - Hispanic, white and black - worked and learned together and got to know one another fairly well. Certainly it was the first time that they were encouraged to talk with one another, to find out things they have in common, to work

together on and interact around non-academic tasks. These initial experiences working and learning together increased their regard for one another.

Yet here too we find teacher differences. Findings of regard for Hispanic students from Teacher B's classes are more what would be expected - the dramatic increase in regard for Hispanic teammates took place when students participated in teambuilding activities and preparation for group work. Regard for Hispanic teammates in Teacher B's treatment classes increased more dramatically from Time 1 to Time 2 (2.67 to 3.09) than in the control class (2.40 to 2.66). From Time 2 to Time 3 the pattern reversed itself, the control class, who now had participated in teambuilding activities and preparation for group work, increased more dramatically (2.66 to 3.13) than did the treatment group (3.09 to 3.30).

Findings for cross-gender regard were not the same as those for cross-ethnic regard. Regard for white teammates in Teacher B's classes did not fit the pattern found in cross-ethnic regard. Both conditions increased regard for white teammates from Time1 to Time 2, and the treatment group's increase was over two times as great as the control group which is similar to the pattern of increased regard for Hispanic students. However, from Time 2 to Time 3, in regard for white students, both conditions decreased in regard for white students, the decrease was nearly four times as much in the treatment group. The Hispanic students, who were in the majority, had not had very many interactive experiences with white students prior to working with together in teams. Participation in exercises and activities may have demonstrated to them that the white students were really "OK to be around" (in comparison to what they may have

thought initially). However, after getting to know the white students better, the Hispanic students learned more about them and, while liking them more than they had at the start, the initial positive regard "bloom" of liking diminished and probably evened out to a more realistic level.

In Teacher A's classes, the increase in cross-ethnic regard was higher from Time 1 to Time 2 than from Time 2 to Time 3 in both conditions. Again, this may be due to the seating arrangements. Students in both conditions were seated in groups and although students in the control condition did not participate in teambuilding and preparation for group work, just being close to one another may have increased cross-ethnic regard.

Regarding gender, findings for the males are the most interesting. Teacher B's classes fit the expected pattern precisely. From Time 1 to Time 2 the treatment group significantly increased in regard for male teammates, from Time 2 to Time 3 there is almost no change (.02 decrease). While in the control group, there was no change in regard from Time 1 to Time 2 but from Time 2 to Time 3 there was a significant increase in regard for male teammates. In Teacher A's classes there was a huge jump (2.38 to 3.42) from Time 1 to Time 2 in the control class but for the rest of the times in both conditions there was no change. There was a significant increase in regard for females across all time points in both conditions in both Teachers' classes.

In this study cooperative learning was what Slavin (1983) would call loosely structured. Yet the preparation for group work was sequenced and structured. First, students in the class got to know one another; next, students were assigned groups and got to know their teammates; then,

teams participated in activities and exercises to teach them skills necessary to work together; and finally, students refined their group skills in helping and effective explaining. Further study of preparation for group work is necessary to tease out the components that make group work "work".

There needs to be further study of the sequence for preparation for group work, particularly as it relates to cooperative learning as an instructional method. Perhaps reward interdependence is not necessary as the "glue" to getting students to work together if students have been prepared for group work in such a way that takes stages of group development into account and that teaches group work skills needed to be successful in groups.

This study raises other questions regarding social skills activities. Does the quantity and quality and timing of social skills activities effect student regard for teammates? 's there a sequence of social skills activities that is more effective than others?

There needs to be further study of teacher style as it relates to cooperative learning. More intensive study of teacher style in a variety of cooperative learning contexts is necessary to begin to unravel what can be attributed to the teacher, and what to cooperative learning as an instructional methodology. Many teachers who have not yet used cooperative learning as an instructional methodology already use informal and/or formal classbuilding, teambuilding and preparation for group work activities and exercises. Others who do use cooperative learning still are uncomfortable with too much student interaction. Questions remain about what changes in regard can be attributed to the context in which

cooperative learning is used and what can be attributed to the methodology itself.

Finally, all these questions must be studied in a variety of cross-ethnic settings. What is the relationship between teacher style and cross-ethnic and cross-gender regard? How does preparation for group work effect cross-ethnic and cross-gender regard?

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Table 1

Analysis of Covariance to Compare
Treatment vs. Control Groups
on Average Ratings Given to Classmates

Teacher	Dependent Variable	Means		p<	Covariate
		Treatment	Control		
	Time 1	2.72	2.59		none
	Time 2	2.82	2.78		none
	Time 3	2.76	2.92		none
A					
	Time 2	2.83	2.78	.809	Time 1
	Time 3	2.82	2.99	.052	Time 2
	Time 3	2.83	2.92	.003*	Time 1
	Time 1	2.69	2.37		none
	Time 2	2.79	2.59		none
	Time 3	2.76	2.10		none
B					
	Time 2	2.79	2.58	.695	Time 1
	Time 3	2.79	2.06	.000*	Time 2
	Time 3	2.77	2.14	.001*	Time 1

* denotes significance at p< .05

Table 2

Analysis of Covariance to Compare
Treatment vs. Control Groups
on Average Ratings Given to Teammates

Teacher	Dependent Variable	Means Treatment	Means Control	p<	Covariate
	Time 1	2.69	2.55		none
	Time 2	3.02	3.09		none
	Time 3	3.01	3.28		none
A					
	Time 2	3.02	3.09	.168	Time 1
	Time 3	3.15	3.30	.551	Time 2
	Time 3	3.13	3.27	.097	Time 1
	Time 1	2.75	2.37		none
	Time 2	3.18	2.58		none
	Time 3	3.12	3.03		none
B					
	Time 2	3.25	2.58	.007*	Time 1
	Time 3	3.18	3.03	.580	Time 2
	Time 3	3.23	3.03	.475	Time 1

* denotes significance at p< .05

Table 3

Repeated Measures Analysis of Variance
Average Ratings of Classmates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	30	2.58	2.81	2.99	.0000*
Treatment	33	2.68	2.81	2.85	.0038*
Teacher B					
Control	30	2.37	2.58	2.13	.0005*
Treatment	49	2.70	2.78	2.77	.3518

* denotes significance at p< .05

Table 4

Repeated Measures Analysis of Variance
Average Ratings of the Teammates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	16	2.46	3.15	3.30	.0000*
Treatment	33	2.67	3.01	3.15	.0000*
Teacher B					
Control	26	2.34	2.62	3.03	.0000*
Treatment	45	2.78	3.23	3.23	.0003*

* denotes significance at p< .05

Table 5

Repeated Measures Analysis of Variance
Average Ratings of Hispanic Classmates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	20	2.47	2.67	2.90	.0002*
Treatment	33	2.39	2.58	2.61	.0006*
Teacher B					
Control	30	2.39	2.58	2.79	.0000*
Treatment	49	2.72	2.79	2.81	.3144

* denotes significance at p< .05

Table 6

Repeated Measures Analysis of Variance
Average Rating of White Classmates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	20	2.40	2.62	2.79	.0000*
Treatment	33	2.57	2.71	2.64	.2151
Teacher B					
Control	30	2.43	2.67	2.38	.0049*
Treatment	49	2.57	2.74	2.64	.0929

* denotes significance at p< .05

Table 7

Repeated Measures Analysis of Variance
Average Ratings of Hispanic Teammates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	13	2.08	2.88	3.23	.0000*
Treatment	30	2.96	3.19	3.34	.0641
Teacher B					
Control	26	2.40	2.66	3.13	.0004*
Treatment	46	2.67	3.09	3.30	.0004*

* denotes significance at p< .05

Table 8

Repeated Measures Analysis of Variance
Average Rating of White/Asian Teammates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	13	2.08	3.04	3.23	.0002*
Treatment	20	2.35	2.89	3.00	.0100*
Teacher B					
Control	17	2.26	2.68	2.59	.1719
Treatment	24	2.50	3.42	2.99	.0008*

* denotes significance at p< .05

Table 9

Repeated Measures Analysis of Variance
Average Ratings of Female Classmates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	20	2.69	2.83	3.06	.0000*
Treatment	17	2.35	2.47	2.54	.2101
Teacher B					
Control	28	2.42	2.64	2.60	.0197*
Treatment	49	2.83	2.83	2.86	.8898

* denotes significance at p< .05

TABLE 10

Repeated Measures Analysis of Variance
Average Rating of Male Classmates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	20	2.55	2.83	2.99	.0000*
Treatment	33	2.78	2.92	2.90	.0188*
Teacher B					
Control	28	2.35	2.50	2.49	.1596
Treatment	49	2.61	2.80	2.68	.0482*

* denotes significance at p< .05

Table 11

Repeated Measures Analysis of Variance
Average Ratings of Female Teammates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	17	2.44	3.05	3.20	.0000*
Treatment	33	2.59	3.06	3.27	.0000*
Teacher B					
Control	24	2.54	2.92	3.22	.0061*
Treatment	44	3.05	3.28	3.47	.0171*

* denotes significance at p< .05

Table 12

Repeated Measures Analysis of Variance
Average Rating of Male Classmates

	N	Time 1	Time 2	Time 3	p<
Teacher A					
Control	12	2.38	3.42	3.42	.0000*
Treatment	26	3.04	3.08	3.10	.9390
Teacher B					
Control	24	2.31	2.31	2.79	.0219*
Treatment	41	2.48	3.15	3.13	.0004*

* denotes significance at p< .05